

## **ABSTRACT**

The present invention provides an anatomically-compatible and physiologically-compatible in vivo device for improving diastolic function of either the left or right ventricle of the heart, comprising at least one air-impermeable sheet that is capable of being operatively connected to the external ventricular surface of the heart by means of one or more connecting elements, such that said at least one air-impermeable sheet is capable of creating a sub-atmospheric pressure within said closed empty space as a consequence of changes in the volume of said space during the course of the cardiac cycle, thereby exerting an outward and normally directed force on the external ventricular surface of the heart.